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Temporal Dynamics of Couples' Communication Behaviors in Conflict Discussions: A
Longitudinal Analysis

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Abstract

Negative and positive conflict communication predicts long-term relationship satisfaction. However, some studies show harmful effects and others show beneficial effects of negative conflict communication on long-term relationship satisfaction. One reason for the heterogeneous results might be that most studies focused on aggregated behaviors across a conflict interaction but neglected the temporal dynamics within such an interaction. This study examined whether individual initial levels and temporal trajectories of negative and positive communication predict long-term relationship satisfaction, and whether self-efficacy beliefs about clarity of other's feelings alter initial levels and temporal trajectories of negative and positive communication. Negative and positive communication were measured based on sequentially coded conflict discussions of 365 couples; self-efficacy beliefs about clarity of other's feelings and relationship satisfaction were measured by self-report questionnaires at baseline and at four annual follow-up assessments. Results revealed that women's initial positive communication predicted higher intercepts of both partners' relationship satisfaction and stronger decreases in women's negative communication predicted a higher intercept of relationship satisfaction in women. Additionally, less steep decreases in women's trajectories of negative communication predicted greater maintenance in women's relationship satisfaction over time. Additionally, men's self-efficacy beliefs about clarity of other's feelings predicted decreases in men's negative communication, increases in women's negative communication, and higher initial levels of women's positive communication. The current study highlights the relevance of dynamic aspects of partners' communication behaviors.

Keywords: conflict communication, empathy, intimate relationships, relationship satisfaction, self-efficacy beliefs, temporal dynamics

Temporal Dynamics of Couples' Communication Behaviors in Conflict Discussions: A Longitudinal Analysis

How couples settle their conflicts is a strong predictor of relationship functioning. Behaviors observed in conflict interactions are robustly associated with relationship satisfaction (M. D. Johnson et al., 2005; Markman, Rhoades, Stanley, Ragan, & Whitton, 2010; Woodin, 2011) and predict long-term relationship stability (Lavner & Bradbury, 2012). Many studies suggest that more negativity and less positivity are associated with worse relationship outcomes (M. D. Johnson et al., 2005; Lavner & Bradbury, 2012; Woodin, 2011). However, recent studies indicate that negative communication in conflict discussions can also be beneficial in the long run (Karney & Bradbury, 1997; McNulty & Russell, 2010; Overall, Fletcher, Simpson, & Sibley, 2009). One reason for these heterogeneous results might be that, to date, most studies have focused on aggregated behaviors across a conflict interaction (M. D. Johnson et al., 2005; Markman et al., 2010) and widely neglected its temporal dynamics. Negative and positive behaviors are, however, most likely not equally distributed during the course of one conflict interaction but unfold over time (Gottman, 1994) and couples differ in these temporal dynamics (Bloch, Haase, & Levenson, 2014; Carstensen, Gottman, & Levenson, 1995; Gottman, Coan, Carrere, & Swanson, 1998). The current study aims to target the variability in the initial levels and temporal trajectories of negative and positive behavior in couples' conflict discussion and investigates (1) whether this variability has consequences for couples' long-term relationship satisfaction, and (2) whether individual characteristics can predict this variability. We propose that empathic competencies, more specifically self-efficacy beliefs about clarity of other's feelings (CoF), might play a crucial role.

Temporal Dynamics of Communication Behaviors in Conflict Discussions

A key feature of conflict discussions in couples are the temporal dynamics of negative and positive communication behaviors, over and above their general average level; that is, regardless of the sheer aggregated level of negativity and positivity some couples might differ

in how negativity and positivity start and unfold over time. According to Gottman (1994), conflict interactions can be divided into three phases: The first phase represents the agenda-building phase in which couples set-up the topic and present their points of view and feelings. In the second phase, the arguing phase, partners start trying to persuade one another by criticizing each other or defending their own position. The arguing phase is, for some couples, accompanied with negative emotions. Nevertheless, partners can try to reduce negativity in the course of the arguing phase by de-escalating strategies such as humor, distraction, or becoming aware of common ground. In the third phase, the negotiation phase, couples ideally try to compromise and to find a solution or, if not possible, continue their argument with counterproposals. Hence, according to this model, negative and positive communication are likely to start at a certain level and unfold over time and the initial levels and the temporal trajectories of negativity and positivity may vary between couples.

Temporal Dynamics of Communication Behaviors and Relationship Satisfaction

The average level of communication behaviors in conflict discussions has been shown to predict long-term relationship satisfaction (M. D. Johnson et al., 2005), but the initial level and the temporal trajectory of communication behaviors are also likely to be significant predictors. While the average of communication behaviors captures the overall negativity across a whole conflict discussion (commonly operationalized by the sum of positive (negative) behaviors during the conversation), the initial level (intercept) and the temporal trajectory (slope) indicate how communication starts in the beginning and unfolds across a given conflict discussion. Using the initial level and temporal trajectory of communication behaviors as measures in couple research allows for the possibility that the effect of communication behaviors differs depending on how the conflict discussion *starts* and *develops*. For instance, if negative communication primarily appears in the beginning of a conflict discussion but fades out towards the end, while positive communication increases during the interaction, the partners experience that they are able to down-regulate their

conflicts and find a solution. In the long run, this may foster the partners' perceptions of relationship satisfaction. On the other hand, if negative communication starts on a high level and remains stable during the entire conflict discussion or even increases towards the end, accompanied by permanently low levels of or decreasing positive communication, the couple likely feels insufficiently capable in solving their conflicts. They probably break up their argument unresolved with high negativity and low positivity.

There are a few previous studies investigating the temporal dynamics of communication behaviors in couple discussions. Early studies showed that enduring cascades of negative behavior are associated with lower concurrent relationship satisfaction (Carstensen et al., 1995) and de-escalation of negativity in conflict interactions predicts long-term relationship stability (Gottman et al., 1998). A more recent study suggests that a greater ability to interrupt cascades of negative behavior predicts long-term relationship satisfaction (Bloch et al., 2014). However, these studies did not differentiate if the down-regulation of negativity took place in the beginning or in the end of a conflict interaction. Given that other studies suggest that satisfied couples have intensive negative conflicts (Gottman, 1993), too, and negative communication can be beneficial for long-term relationship functioning (Karney & Bradbury, 1997; McNulty & Russell, 2010; Overall et al., 2009), down-regulation of negativity might not be important in the beginning of an argument but gets more important across the course of a conflict discussion. That is, couples with higher long-term relationship satisfaction might initially show equal levels of negative communication compared to couples with lower long-term relationship satisfaction, but they might be better able to down-regulate their negativity in the course of the argument. In sum, there are several reasons why it might be particularly couple's capability of decreasing negativity rather than avoiding conflicts at the outset that is crucial for maintaining high relationship satisfaction over time: (1) Patterns of high negativity in the beginning or middle of a conflict discussion followed by lower levels of negativity in the end have been shown to be characteristic for couples with high

relationship stability (Gottman, 1993); (2) avoidance of conflicts can be detrimental for long-term relationship satisfaction (McNulty & Russell, 2010); (3) de-escalation of negative communication predicts long-term relationship outcomes (Bloch et al., 2014; Gottman et al., 1998).

Regarding positive behavior in conflict discussions, research targeting temporal dynamics is scarcer. More satisfied couples seem, on average, to communicate more positively (Woodin, 2011) and positivity has been shown to be associated with long-term relationship satisfaction and stability (Gottman et al., 1998). Thus, either high initial level of positivity and/or increases in positivity are likely to be predictive of long-term relationship satisfaction.

Predictors of Temporal Dynamics of Couple Communication

Couples vary in their initial levels and temporal trajectories of communication behaviors in conflict discussion (Gottman, 1994) but little is known about individual characteristics that account for this variability. A recent study showed that people with less avoidance orientation towards goals within their romantic relationship showed a stronger decline in their likelihood of negative communication during the course of a conflict discussion (Kuster et al., 2015). However, besides this study, findings on which individual characteristics alter initial levels and temporal trajectories of negative communication are rare. Given that previous studies suggest that temporal dynamics of communication behaviors are associated with relationship satisfaction (Bloch et al., 2014; Carstensen et al., 1995), it seems important to continue this line of research. We propose that self-efficacy beliefs about clarity of other's feelings (CoF) may play a central role.

CoF is the emotional competency of knowing how other people feel and naming these feelings (Lischetzke, Eid, & Diener, 2012). It can be classified as a cognitive component of empathy and is conceptualized as a trait (Lischetzke, Eid, Wittig, & Trierweiler, 2001). As CoF focuses on the cognitive understanding of other people's feelings, it is distinct from other

cognitive components of empathy such as perspective taking as defined by Davis (1983) that captures the behavioral tendency to adopt the perspective of others (Lischetzke et al., 2001). CoF was adapted from the analogous construct *clarity of one's own feelings* which is a specific facet of broader constructs capturing emotional trait competencies concerning one's own feelings (e.g., emotional intelligence; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Hence, CoF delineates a link between interpersonal and intrapersonal emotional trait competency constructs.

CoF can be assessed either as an ability or as a self-efficacy belief about this ability and the current study focuses on the latter exclusively (Keefer, 2014; Lischetzke et al., 2012). Self-efficacy beliefs are measured by self-report and capture an individual's perception of his/her own ability of identifying other people's feelings (Keefer, 2014). Self-efficacy beliefs about emotional competencies have shown to be distinct from the actual abilities (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Keefer, 2014); however, they are at least equally important as actual abilities, since self-efficacy beliefs are predictors of relevant individual and relationship outcomes (Keefer, 2014; Leuchtmann et al., 2018; Lischetzke et al., 2012; Zeidner, Kloda, & Matthews, 2013).

Past research examining closely related constructs suggests that self-efficacy beliefs about CoF might affect a partner's ability to alter the temporal dynamics of communication behaviors in conflict discussions in a de-escalating manner. A more accurate understanding of one's partner's feelings within a specific conversation (i.e., empathic accuracy) was found to be associated with less destructive and aggressive (Cohen, Schulz, Liu, Halassa, & Waldinger, 2015) but more constructive and conciliatory reactions to destructive partner behavior (Kilpatrick, Bissonnette, & Rusbult, 2002). Moreover, the dispositional behavioral tendency to adopt the other person's perspective (i.e., perspective taking) goes along with a more yielding and less fighting conflict style (Rizkalla, Wertheim, & Hodgson, 2008). Thus, cognitive components of empathy seem to covary with more positivity and less negativity in

conflict interactions (Cohen et al., 2015; Rizkalla et al., 2008), and may also be linked to more de-escalating and more constructive temporal trajectories of conflict interactions (Kilpatrick et al., 2002). This assumption is supported by previous findings showing that self-efficacy beliefs predicted similar outcomes as abilities in various contexts (Bandura, 1997; Zeidner et al., 2013) and have been shown to be important predictors of adaptive behaviors in emotional intense social interactions (see Keefer, 2014). More specifically, partners' self-efficacy beliefs about CoF may contribute to lower initial negativity and higher initial positivity in couple conflicts and may predict stronger decreases in negativity and lower decreases in positivity across the conflict interaction.

The Current Study

In the current study we examined the variability in the temporal dynamics of negative and positive communication in conflict discussions of couples. We capture the temporal dynamics with the intercept (i.e., initial levels) and slope (i.e., trajectory) of communication behavior and tested the following hypotheses.

H1a: The temporal trajectory (slope) of negative communication (i.e., stronger decreases), predicts less decrease in relationship satisfaction across 4 years whereas the initial level (intercept) of negative communication is no significant predictor.

H1b: The initial level of positive communication and/or the trajectory (i.e., lower decreases) of positive communication across the course of a conflict discussion predict less decrease in relationship satisfaction across 4 years.

H2a: Partners' self-efficacy beliefs about CoF predict a lower initial level of negative communication and stronger declines in negative communication across the conflict discussion.

H2b: Partners' self-efficacy beliefs about CoF predict higher initial level of positive communication and lower decreases in positive communication across the conflict discussion.

Method

Participants

The current study used data from a larger research project investigating the impact of stress on intimate relationships. Couples were recruited by advertisements in newspapers and on the radio. To be eligible, couples had to be in their current relationship for at least one year. The sample initially consisted of 368 heterosexual Swiss couples at the first occasion of measurement. From three couples we did not have observational data (one couple refused to participate in the interaction task, one couple wanted to delete their video after the task, and one video was missing due to technical problems). Thus, the final sample consisted of 365 couples at first assessment. Couples were between 20 and 80 years old with a mean age of $M = 47.2$ years for women ($SD = 18.3$) and $M = 49.3$ years for men ($SD = 18.3$). On average, they were in their current relationship for $M = 21.2$ years ($SD = 18.1$, range: 1-60). Sixty-six percent of the couples were married, 85% lived together, and 65% had children. Participant's level of education and income indicate that the current sample is a Swiss middle-class sample (Federal Statistical Office, 2015; for detailed sample description see Kuster et al., 2015).

Of the sample of 365 couples at time 1 (T1), 298 couples participated at time 2 (T2), 248 couples at time 3 (T3), 223 couples at time 4 (T4), and 218 couples at time 5 (T5). Couples dropped out because of separation/divorce (41 couples), widowhood (6 couples) or because they did not want to or were not able to participate anymore (100 couples). Couples who dropped out differed from couples who still participated at T5 with respect to the occurrence rate of negative communication in the conflict discussion at T1; dropouts showed higher rates of negative communication (women: $t(363) = -2.18$, $p = .030$; men: $t(363) = -2.25$, $p = .025$). Additionally, dropouts had a lower education than couples that still participated at T5 (women: $U = -2.79$, $p = .005$; men: $U = -2.11$, $p = .035$), the probability to dropout was almost twice as high for not married couples compared to married couples ($\chi^2(1) = 9.44$, $p = .002$, odd ratio = 1.98), and women who still participated at T5 had a lower income at T1 ($U = -2.34$, $p = .019$). Dropouts did not differ from couples who still

participated at T5 in any other target variables, control variables, age, or relationship duration at T1. This study was approved by the local ethics committee. The current dataset has already been used in other publications (e.g., Kuster et al., 2015). The present article is the only one that targets long-term effects of conflict communication on relationship satisfaction and the effect of CoF on conflict communication. Consequently, the current results do not overlap with previous results reported.

Procedure

Participants were invited to the laboratory, were informed about the procedure and provided informed consent. Afterwards, they completed questionnaires in separate rooms and participated in three videotaped interaction tasks of eight minutes duration each, (i.e., at first, in a conflict discussion, afterwards in two support interactions that are not relevant for the present research question). At the end of T1, participants were reimbursed with 100 CHF (approximately 105 USD). Participants were invited to the laboratory again annually across the next 4 years (T2, T3, T4, T5). At the following measurement points, the same procedure took place as at T1, but reimbursement increased by 10 CHF (approximately 11 USD) each year.

Measures

Relationship Satisfaction. Relationship satisfaction was measured by the German version of the Relationship Assessment Scale (RAS; Hendrick, 1988; Sander & Boecker, 1993). Both partners rated seven items on a 5-point scale with various verbal anchors depending on the content of the items (e.g., "How often do you wish you had not gotten into this relationship?" (reversely coded)). In the current study, we used data measured at T1, T2, T3, T4, and T5; internal consistencies for men and women at all five measurement points were acceptable, ranging from Cronbach's $\alpha = .84$ to $\alpha = .89$. Strong factorial invariance across measurement points and gender can be assumed, for details see supplementary materials.

Communication Behavior. In order to assess couples' negative and positive communication behavior, we relied on the videotaped conflict interaction task from T1. In this conflict task, the two partners first rated the topic severity of 13 potential problem domains (e.g., communication, finances, children, sexuality) within their relationship (PAQ A; Heavey, Christensen, & Malamuth, 1995) on a 4-point scale (1 = *undemanding* to 4 = *very demanding*). They could also name additional topics. Afterwards, the two partners agreed upon the topic to be discussed during the following 8 minutes while being videotaped. The most frequently discussed topic were communication problems with the partner ($n = 54$, 14.7%), followed by annoying habits of the partner ($n = 43$, 11.7%), and finances ($n = 38$, 10.4%). The average topic severity of the selected topic was $M = 2.63$ ($SD = 0.70$).

The negative and positive communication behavior partners displayed during this conversation was coded based on an adapted version of the Specific Affective Coding System (SPAFF; Bodenmann, 2011; Gottman, 1994). This coding system consists of different categories regarding verbal negative communication (i.e., criticism, defensiveness, domineering, stonewalling, interruption, contempt, and belligerence) and verbal positive communication (i.e., interest/curiosity, validation, caring). We used sequence coding cutting the videotaped interactions into 48 sequences, intervals of 10 seconds each. In each sequence, research assistants coded if a negative or positive behavior, respectively, occurred (= 1) or not (= 0). If negative and positive behaviors were present in the same 10s interval, only negative behavior was coded. As the occurrence rates of the different subcategories of negative and positive communication were too low to be examined separately (average occurrence rates ranged between 0.03–2.94 sequences for negative communication and between 0.08–7.41 sequences for positive communication), we built a composite score combining all negative and positive subcategories, respectively. Given that the occurrence rate of negative and positive communication in the first sequence was remarkably lower (negative communication: 5.5%; positive communication: 25.8%) compared to all other sequences (negative

communication ranging between 12.9–22.5%; positive communication ranging between 29.1–39.0%) and the video visualization depicted that many couples were not talking yet about their conflict topic but got accustomed to the situation, we excluded the first sequence.

Assuring high standard behavioral coding, two research assistants were trained in coding the observed negative communication behavior (at least 60 hours practice). Throughout the training session the two research assistants always coded together, discussed inconsistencies, and had regular meetings with the coding instructor in which they discussed questions and the coding instructor gave feedback on their coding. At the end of the training period, interrater-reliability was computed based on the coding of one video, which was selected by the coding instructor based on the criterion that it contains high variability in the coding categories. Interrater-reliability was satisfactory with Cohen's $\kappa = .90$. Subsequently, the two research assistants coded all video-taped conflict interactions simultaneously, one focusing on the man, the other focusing on the woman. The two research assistants coded all videos simultaneously to ensure that they can discuss insecurities in coding and to ensure that they maintain high consistency in coding. Data used in the current study was only based on coding after the training session and reliability check.

Self-Efficacy Beliefs about Clarity of Other's Feelings (CoF). Self-efficacy beliefs about CoF were measured by a questionnaire of Lischetzke et al. (2001) containing six items such as "I know what other people feel", rated on a 4-point frequency scale (1 = *almost never*, 4 = *almost always*). Past studies have shown high reliability and validity of this measure in different samples (Lischetzke et al., 2012, 2001). Internal consistencies were .79 - .82 in a German sample (Lischetzke et al., 2001) and .50 - .82 in a study based on 42 nations using a shortened version of the questionnaire (Lischetzke et al., 2012). In the current study, we used data collected at T1. Internal consistencies were $\alpha = .81$ for women and $\alpha = .88$ for men, respectively.

Statistical Analyses

In our first hypotheses (H1a, H1b), we were interested in whether the initial level and temporal trajectory of negative and positive communication during a conflict discussion predict long-term relationship satisfaction. To measure the initial level and temporal trajectory of each partner's negative and positive communication, we examined the effect of time on the probability of showing negative and positive communication behavior, respectively, within each sequence measured at T1 (probability of negative or positive communication in the remainder of the manuscript). The dataset of the observational data theoretically consisted of $365 \text{ (couples)} \times 2 \text{ (partners)} \times 47 \text{ (sequences)} = 34,310$ data points with 153 data points missing (0.45%) resulting in a final dataset consisting of 34,157 data points. To take the nested and dyadic structure of the data into account, we used a multilevel model for dyadic data that treats the three levels of our data (sequences nested within partners nested within couples) as two levels (for more details see Laurenceau & Bolger, 2005; Raudenbush & Bryk, 2002). Level 1 represents variability due to within person repeated measures and Level 2 represents variability between couples. As negative and positive communication were coded as a binary variable (0 = no negative/positive communication present, 1 = negative/positive communication present), we used a generalized mixed linear model with a logit link function, using the adaptive Gauss-Hermite quadrature approximation with an optimization of the random and fixed-effects coefficients in the penalized iteratively reweighted least squares step (see Raudenbush & Bryk, 2002). The initial levels and temporal trajectories of negative and positive communication were estimated in separate models. For making the statistical analysis more interpretable (Bolger & Laurenceau, 2013), the time variable was centered such that Time = 0 represents the beginning of the investigated part of the conversation (i.e., second sequence). Following the recommendations of Barr, Levy, Scheepers, and Tily (2013), we included random intercepts and random slopes for time.

We tested for linear and quadratic time trends. As the quadratic time trends were not significant for negative communication (men: $b = 0.0002$, $SE = 0.0003$, $p = .518$, women: $b = -0.0003$, $SE = 0.0002$, $p = .176$) and positive communication (men: $b = -0.0019$, $SE = 0.0067$, $p = .781$, women: $b = -0.0018$, $SE = 0.0068$, $p = .791$), we did not include them in the analyses of negative and positive communication. We used the lme4 (Bates, Maechler, Bolker, & Walker, 2015) package for multilevel modeling in R (R Core Team, 2014). See supplementary materials for the equations and results of the estimated models.

In both models (i.e., the models estimating the probability of negative and positive communication, respectively), we extracted the individual intercepts and individual slopes of time representing an individual's initial level and temporal trajectory of his/her own negative and positive communication, respectively. We then estimated a latent-growth curve model incorporating dyadic data analysis procedures to account for the interdependency between the partners of a couple (Kenny, Kashy, & Cook, 2006), predicting each partner's individual intercept and slope of relationship satisfaction across the five measurement points by both partners' intercepts and slopes of negative and positive communication within the conflict discussion (see Figure 1; Preacher, Wichman, MacCallum, & Briggs, 2008). We included relationship duration as a control variable to consider the fact that the current sample was quite heterogeneous with regard to relationship duration¹. Model estimations were conducted using Mplus 7 (Muthén & Muthén, 1998-2015).

In our second hypotheses (H2a, H2b), we were interested in whether self-efficacy beliefs about CoF account for variability in the initial levels and temporal trajectories of negative and positive communication. Thus, we used the same multilevel model as described above but included the effects of Time, CoF, and the cross-level interaction of Time \times CoF as predictors on the probability of negative and positive communication, respectively, within a specific sequence. Given the dyadic nature of our data, we examined actor and partner effects of CoF and Time \times CoF (actor effects: effects of women's (men's) CoF on women's (men's)

communication behavior; partner effects: effects of women's CoF on men's communication behavior and vice versa). Separate models were estimated for negative and positive communication. To rule out that the effects of CoF were driven by relationship satisfaction, relationship duration, or topic severity, we additionally included their main effects and their interaction effects with Time². Before running the analyses, we adapted the predictor variables as follows: Time was centered as described above, CoF was grand-mean centered separately for men and women by subtracting the mean of CoF across men (or women, respectively) from each male (or female) partner's raw score (Bolger & Laurenceau, 2013; Raudenbush & Bryk, 2002).

Results

Descriptive Statistics

Descriptive statistics and correlations of all study variables are presented in Table 1. In women, relationship satisfaction of all measurement points was negatively associated with the number of sequences with negative communication and positively associated with the number of sequences with positive communication. In men, negative communication was negatively associated with relationship satisfaction at T1 and T2 and the number of sequences with positive communication was positively associated with relationship satisfaction at T1. The significant correlations between men and women in all study variables indicated that the interdependency within a couple had to be taken into account in all further analyses.

Temporal Dynamics of Communication Behavior and Long-Term Relationship Satisfaction

In hypotheses H1a and H1b we proposed that greater down-regulation of negative communication across the course of the conflict discussion and the initial level of positive communication and/or the trajectory of positive communication would predict change in relationship satisfaction over time in men and women. The estimated latent-growth curve

model (see Figure 1) provided excellent fit to the data ($\chi^2(90) = 120.18, p = .019$; RMSEA = .030; CFI = .987) and parameter estimates are presented in Table 2.

Higher decreases in women's trajectory of negative communication within the conflict discussion at T1 predicted a higher intercept of women's relationship satisfaction. The effect of women's trajectory of negative communication on men's intercept of relationship satisfaction showed the same trend and was marginally significant ($p = .055$). Additionally, higher initial levels of women's positive communication within a conflict discussion at T1 predicted higher intercepts of both partners' relationship satisfaction. Thus, couples who started the conflict discussion with higher levels of positivity of the women or were able to down-regulate the women's negativity throughout the conflict conversation were those couples who also reported higher relationship satisfaction at T1.

Women's trajectory of negative communication within the conflict discussion at T1 predicted change in women's relationship satisfaction over four years such that less decreases in women's negative communication predicted *less* decreases in women's relationship satisfaction over time.

Self-Efficacy Beliefs about CoF Altering the Temporal Dynamics of Communication Behavior

In hypotheses H2a and H2b we proposed that partners with higher self-efficacy beliefs about CoF show lower initial levels and a stronger decrease in negative communication across the conflict discussion and higher initial levels and lower decreases in positive communication than partners with lower self-efficacy beliefs about CoF. The estimated model parameters are presented in Table 3 and were controlled for the effects of relationship duration, relationship satisfaction, and topic severity and its respective interaction effects with time.

In the model predicting the probability of negative communication, the actor and partner effect of the interaction $\text{CoF}_{\text{Men}} \times \text{Time}$ were significant and are illustrated in Figure 2.

The actor effect is depicted in the upper part of Figure 2 and shows that the probability for men's negative communication in men higher in CoF decreases from 10.0% to 6.7% in the course of the conflict discussion while it increases for men lower in CoF from 8.8% to 14.5%. The partner effect of $\text{CoF}_{\text{Men}} \times \text{Time}$ is illustrated in the lower part of Figure 2 and shows the opposite pattern. The probability for women's negative communication with partners displaying high CoF increases from 10.0% to 13.3% whereas it decreases from 11.4% to 9.7% in couples with men low in CoF.

In the model predicting the probability of positive communication, the partner effect of men's CoF on women's positive communication was significant. Thus, when men reported higher CoF, their female partner showed higher initial levels of positivity in the conflict discussion.

Discussion

The current study targeted the variability of temporal dynamics (initial levels and temporal trajectories) of negative and positive communication within an 8-minute conflict discussion and tested (1) whether these temporal dynamics of partners' negative and positive communication within the conflict interaction can predict long-term relationship satisfaction and (2) whether variability in those temporal dynamics can be predicted by partner's self-efficacy beliefs about CoF. Our results revealed that women of more satisfied couples started their conflict discussion with higher positive communication and were better able to down-regulate their negative communication during the course of the conflict conversation. This finding is in line with previous cross-sectional studies showing that more satisfied couples communicate less negatively and more positively (Woodin, 2011). Moreover, the current study goes beyond these previous studies by showing that it seems to be the level of positive communication *and* the trajectory of negative communication that are most strongly associated with relationship satisfaction. Hence, it seems important to differentiate initial levels of a communication behavior from temporal trajectories.

The trajectory of women's negative communication did predict *change* in relationship satisfaction across four years: Less decreases in women's negative communication predicted greater maintenance of high levels of women's relationship satisfaction across time. This result yields the opposite pattern of our prediction and it is also in contrast to findings of Bloch et al. (2014) showing that greater down-regulation of negative communication predicted increases in relationship satisfaction across time. However, the current finding is in line with previous studies indicating that more negative communication can be beneficial for long-term relationship satisfaction under certain circumstances (Karney & Bradbury, 1997; McNulty & Russell, 2010; Overall et al., 2009). Given that only women's trajectory of negativity but not the initial level of negativity was predictive for long-term relationship satisfaction, it seems to be the trajectory that actually matters. In line with explanations suggested by McNulty and Russell (2010), the current findings may be interpreted as support for the notion that the avoidance of negativity in conflicts can be detrimental for long-term relationship satisfaction. More specifically, the current findings may indicate that it is important to carry out conflicts even when associated with enduring negativity within a conflict discussion in order to maintain long-term relationship satisfaction, although associated with lower momentary relationship satisfaction. In sum, however, the current study reveals that the interplay of positivity and negativity in conflict interaction with long-term relationship satisfaction is extremely complex and that to date no clear pattern of homogeneous findings emerges. The impact of positivity and negativity during a conflict task reflects the climate of the conflict, yet, increases or decreases of these behaviors do not imply that a conflict is actually solved, that a negative behavior is no longer present but hidden for the sake of the interaction climate, or that enduring negativity within one conflict interaction actually contributes to a solution of the conflict. In future studies, it may be worth considering if the same conflict occurs repeatedly over time and how positivity and negativity during this conflict influence relationship satisfaction, how these behaviors influence relationship

satisfaction if conflicts are solved after the discussion, and which temporal dynamics of behaviors within a conflict discussion contribute to a more successful development of the conflict issue over time.

Neither initial negative communication nor initial positive communication or trajectories of positive communication predicted changes in long-term relationship satisfaction. Some of the effects may have been non-significant due to the fact that this study examined couples being in a long-term relationship who typically show less variability in changes in relationship satisfaction compared to newlyweds. Thus, more research is needed to disentangle which aspects of communication behavior influence long-term relationship satisfaction. The current results suggest that the investigation of temporal trajectories of communication behavior is a promising subject of further scrutiny.

The current study suggests that negative communication behavior may have different effects on relationship satisfaction in the short or long run. In the short run, consistently with a considerable number of previous cross-sectional studies (Woodin, 2011), negative communication was negatively associated with relationship satisfaction. In the long run, however, our data indicate that some aspects of negative communication may contribute to greater maintenance of relationship satisfaction; a finding that is in line with some prior studies (Karney & Bradbury, 1997; McNulty & Russell, 2010; Overall et al., 2009) but not with others (Bloch et al., 2014). Further research is needed to clarify which aspects of negative communication and under which circumstances negative communication can be beneficial for long-term relationship satisfaction. Findings of this study and past research showing positive long-term effects of negative communication need to be replicated and new insights need to be provided to resolve the current heterogeneity.

Results of the current study examined actor and partner effects of self-efficacy beliefs about CoF on negative and positive communication and revealed that self-efficacy beliefs about CoF altered the temporal trajectory of negative communication and the initial level of

positive communication within a conflict discussion. First and in line with our hypothesis, men who reported to know other people's feelings well showed a stronger decrease in negative communication (actor effect) suggesting that they down-regulated their own negative behavior within the temporal course of the conflict discussion more effectively. This finding is in line with previous studies examining other aspects of cognitive empathy showing that men's cognitive empathy covaries with less negativity (Cohen et al., 2015; Rizkalla et al., 2008) and with more de-escalating conflict communication (Kilpatrick et al., 2002). Thus, the current results confirm the robustness of the actor effect of cognitive empathy on constructive conflict styles.

Second, men's self-efficacy beliefs about CoF predicted stronger increases in women's negative communication and higher levels in women's initial positive communication (partner effects), which may be interpreted as a more engaged conflict communication behavior (more negativity and positivity). In contrast to the best of our knowledge the only other study examining partner effects of cognitive empathy on conflict communication (Kilpatrick et al., 2002) showed that one partner's cognitive empathy was associated with more constructive and conciliatory reactions on destructive partner behavior in the other partner indicating a more de-escalating conflict communication. The divergent results may be explained by the fact that the previous study examined a different aspect of cognitive empathy (i.e., empathic accuracy) and examined self-reported conflict communication whereas the current study used behavioral observations. More research is needed to clarify partner effects of different aspects of cognitive empathy on conflict communication.

Women's self-efficacy beliefs about CoF did not predict either negative or positive communication behavior. One reason for the non-significant findings in women may be that most of the women had relatively high levels of clarity of other's feelings, resulting in potential ceiling effects and making it less likely for the effect to reach statistical significance.

Strengths and Limitations

Major strengths of the current study are its longitudinal design, the inclusion of observational data, and the investigation of the temporal trajectories of negative and positive communication. The longitudinal design allowed us to assess associations with long-term relationship satisfaction and to test for effects on changes in relationship satisfaction. The inclusion of observational data limits the vulnerability of the results for being inflated by shared method variance. And by investigating the temporal trajectories of negative and positive communication, this study expands on previous results by taking aspects of the temporal dynamics of conflict discussions into account.

Nevertheless, several limitations have to be mentioned. First, we were not able to disentangle the distinct effects of different negative communication behaviors, as the incidence rates of the single behaviors were too low. As the effects of negative communication on relationship satisfaction might differ depending on the specific type of negative communication (e.g., whether the negative communication is direct or indirect; Overall et al., 2009), future studies with higher incidence rates of negative behaviors should target this possibility.

Second, the coding procedure had some weaknesses. Cohen's Kappa was calculated based on one video only, which increases the likelihood that the reported interrater reliability is not representative for all videos. However, the coding instructor carefully selected the video such that it contains high variability in the different coding categories. Additionally, the provided Cohen's Kappa is a conservative estimator as it was based on different subcategories of positivity and negativity whereas in the current study we did not differentiate the subcategories but only used the coding positivity, negativity, and neutral. Thus, the interrater reliability on the level of these three superordinate categories may be even higher. However, no continued reliability assessments were conducted throughout the coding process, which heightens the likelihood of coding shifts (Harris & Lahey, 1982). Albeit we do not have

statistical proof, the procedure that the two research assistants coded all videos together throughout the whole coding process and were instructed to discuss ambiguous sequences likely enhanced the equality of coding between the two coders throughout the coding process. Moreover, as one research assistant always coded the male partner and the other research assistant always coded the female partner, coders were confounded with gender, which may have influenced the gender specific results in the current study.

Third, self-efficacy beliefs about CoF did not specifically capture self-efficacy beliefs about clarity of feelings of one's partner but assessed self-efficacy beliefs about clarity of feelings of other people in general. Given that self-efficacy beliefs about CoF can vary across interaction partners, this might have influenced the results. As the current study investigated the effect of self-efficacy beliefs about CoF (unspecific to one's partner) on negative communication (relationship-specific variable), the current study might even underestimate the strength of the effect.

Fourth, we measured self-efficacy beliefs about CoF unspecific to the type of feelings, but the effect of self-efficacy beliefs about CoF on conflict communication may depend on what type of feeling one is clear about (Cohen et al., 2015). It might be particularly beneficial, for example, to be clear about one's partner's soft emotions, such as sadness or feeling hurt (vs. hard emotions such as anger; Sanford, 2007). Future studies could benefit from disentangling the distinct effects of self-efficacy beliefs about CoF regarding specific feelings.

Fifth, the effects of self-efficacy beliefs about CoF on negative and positive communication are based on cross-sectional data. Thus, no conclusion about the direction of effect can be drawn. Conflict communication skills might also foster self-efficacy beliefs about CoF. Most likely, the effects are bidirectional: self-efficacy beliefs about CoF alter conflict communication and experiences in conflict discussions influence self-efficacy beliefs about CoF in the long-run.

Practical Implications

The current results suggest that momentary relationship satisfaction is associated with higher initial positive communication and stronger decreases in negative communication of women. Additionally, less decrease in women's negative communication was associated with better maintenance of relationship satisfaction across time. Thus, initial levels at the start of a conversation and temporal trajectories of communication behaviors seem to have distinct effects on relationship satisfaction. These results demonstrate the importance of taking temporal dynamics of communication behavior into account in future studies as by using sum-scores of communication behavior important information may be missed.

The effect that less decrease in women's trajectory of negative communication was accompanied with greater maintenance of relationship satisfaction in the long-run may suggest that couples should be encouraged to carry out their conflicts in order to maintain long-term relationship satisfaction, although it is associated with lower momentary relationship satisfaction. However, based on findings of previous studies, this advice may need to be adjusted to the individual characteristics of the couple. Couples may especially benefit from carrying out their conflicts even when accompanied with high negativity when the problem at stake is severe (McNulty & Russell, 2010), when their negative communication is direct rather than indirect (Overall et al., 2009), and when partners experience few depressive symptoms (Baker & McNulty, 2015).

For changing a couple's conflict communication, besides other well-known couple interventions (see for example Baucom & Epstein, 1990; S. M. Johnson & Greenberg, 1995), the current results suggest that it may also be a promising starting point to target men's self-efficacy beliefs about CoF. Whether it may be also worth strengthening women's self-efficacy beliefs about CoF cannot be decided based on the current results as effects of women's CoF were not significant, which, however, may also be due to ceiling effects in women's CoF. Future research is needed to further clarify the gender effects. Strengthening self-efficacy beliefs about CoF could be implemented by encouraging partners to explicitly express their

understanding of the other partner's feelings and to provide positive feedback to each other whenever they felt understood.

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¹We tested whether marriage (being married vs. being not married) had an impact on the effects by including marriage as an additional control variable. However, as marriage did not substantially alter the results, we did not include it as a control variable in the final models.

²We tested whether marriage (being married vs. being not married) had an impact on the effects by including its main effects and its interaction effects with Time. However, as these predictors did not substantially alter the results, we did not include them in the final models.

Table 1

Intercorrelations, Means, and Standard Deviations of All Study Variables

Variable	Correlations								Women		Men	
	1	2	3	4	5	6	7	8	<i>M (SD)</i>	Range	<i>M (SD)</i>	Range
1 CoF T1	.20***	.02	.00	.12*	.10	.12	.08	.07	3.06 (0.45) ¹	1.50 – 4.00	2.86 (0.55) ¹	1.00 – 4.00
2 Negative com T1	-.10	.55***	-.28***	-.32***	-.27***	-.24***	-.24***	-.31***	4.77 (5.75)	0.00 – 37.00	4.48 (6.24)	0.00 – 40.00
3 Positive com T1	.13*	-.41***	.17**	.22***	.16**	.21**	.17*	.20**	7.33 (5.75) ¹	0.00 – 31.00	9.67 (6.83) ¹	0.00 – 32.00
4 RS T1	.13*	-.22***	.16**	.60***	.79***	.77***	.69***	.68***	4.33 (0.50) ¹	2.29 – 5.00	4.38 (0.47) ¹	2.43 – 5.00
5 RS T2	.09	-.14*	.08	.79***	.60***	.77***	.74***	.70***	4.34 (0.53) ¹	1.29 – 5.00	4.40 (0.47) ¹	2.57 – 5.00
6 RS T3	.10	-.08	.10	.75***	.78***	.56***	.76***	.76***	4.32 (0.54)	2.43 – 5.00	4.37 (0.51)	2.14 – 5.00
7 RS T4	.10	-.09	.02	.73***	.70***	.79***	.64***	.80***	4.28 (0.60) ¹	2.00 – 5.00	4.38 (0.48) ¹	2.43 – 5.00
8 RS T5	.08	-.02	.02	.67***	.66***	.72***	.79***	.62***	4.29 (0.59) ¹	1.86 – 5.00	4.39 (0.50) ¹	2.29 – 5.00

Note. CoF = Self-efficacy belief about clarity of other's feelings. Negative com = occurrence rate of negative communication. Positive com = occurrence rate of positive

communication. RS = relationship satisfaction. T1 – T5 = Time 1 – Time 5. Correlations of women are presented above the main diagonal, correlations of men are presented

below the main diagonal, correlations between men and women are displayed in italics in the main diagonal. ¹Mean differences between men and women are significant.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

Table 2

*Negative and Positive Communication Predicting Relationship Satisfaction over Time:**Parameter Estimates of the Latent Growth Curve Model*

	<i>Unstandardized Estimate</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>	<i>Standardized Estimate</i>
<i>Latent Variables</i>					
Intercept RS_F	4.317	0.118	<.001	[4.014, 4.548]	9.41
Intercept RS_M	4.384	0.110	<.001	[4.168, 4.599]	10.14
Slope RS_F	-0.059	0.034	.086	[-0.126, 0.008]	-0.73
Slope RS_M	-0.023	0.030	.438	[-0.082, 0.035]	-0.33
<i>Path Coefficients</i>					
<i>Predicting Intercept RS_F</i>					
I_NegCom _F	-0.040	0.039	.302	[-0.116, 0.036]	-0.10
I_NegCom _M	-0.022	0.032	.499	[-0.085, 0.042]	-0.07
S_NegCom _F	-7.220	1.789	<.001	[-10.726, -3.714]	-0.33
S_NegCom _M	2.101	1.740	.227	[-1.309, 5.511]	-0.10
I_PosCom _F	0.098	0.039	.011	[0.022, 0.174]	0.15
I_PosCom _M	0.017	0.033	.607	[-0.048, 0.082]	0.03
S_PosCom _F	1.129	1.725	.513	[-2.252, 4.511]	0.04
S_PosCom _M	0.104	1.729	.952	[-3.285, 3.492]	0.00
RelDur	0.000	0.001	.989	[-0.003, 0.003]	0.00
<i>Predicting Intercept RS_M</i>					
I_NegCom _F	-0.003	0.036	.930	[-0.074, 0.068]	-0.01
I_NegCom _M	-0.033	0.030	.267	[-0.093, 0.026]	-0.11
S_NegCom _F	-3.192	1.667	.055	[-6.458, 0.075]	-0.16
S_NegCom _M	-1.012	1.621	.532	[-4.189, 2.164]	-0.05
I_PosCom _F	0.085	0.036	.019	[0.014, 0.156]	0.14
I_PosCom _M	0.044	0.031	.154	[-0.016, 0.104]	0.09
S_PosCom _F	2.383	1.610	.139	[-0.772, 5.539]	0.09
S_PosCom _M	1.116	1.613	.489	[-2.046, 4.279]	0.05
RelDur	0.004	0.001	.001	[0.002, 0.007]	0.18
<i>Predicting Slope RS_F</i>					
I_NegCom _F	-0.011	0.011	.338	[-0.033, 0.011]	-0.15
I_NegCom _M	0.004	0.009	.702	[-0.015, 0.022]	0.06
S_NegCom _F	1.228	0.512	.016	[0.225, 2.232]	0.33
S_NegCom _M	-0.773	0.529	.144	[-1.811, 0.264]	-0.21
I_PosCom _F	0.004	0.011	.706	[-0.017, 0.026]	0.04
I_PosCom _M	-0.010	0.010	.303	[-0.029, 0.009]	-0.11
S_PosCom _F	0.558	0.495	.260	[-0.413, 1.528]	0.11
S_PosCom _M	0.142	0.505	.779	[-0.849, 1.132]	0.03
RelDur	0.001	0.000	.007	[0.000, 0.002]	0.25
<i>Predicting Slope RS_M</i>					
I_NegCom _F	-0.005	0.010	.595	[-0.025, 0.014]	-0.08
I_NegCom _M	0.008	0.008	.329	[-0.008, 0.024]	0.16
S_NegCom _F	-0.425	0.443	.338	[-1.294, 0.444]	-0.13
S_NegCom _M	0.540	0.457	.237	[-0.355, 1.436]	0.17
I_PosCom _F	0.003	0.010	.761	[-0.016, 0.022]	0.03
I_PosCom _M	-0.008	0.008	.341	[-0.025, 0.009]	-0.10
S_PosCom _F	0.164	0.433	.704	[-0.684, 1.013]	0.04
S_PosCom _M	-0.036	0.440	.934	[-0.899, 0.827]	-0.01
RelDur	0.001	0.000	.017	[0.000, 0.002]	0.22

Table continues.

	<i>Unstandardized Estimate</i>	<i>SE</i>	<i>p</i>	<i>95% CI</i>	<i>Standardized Estimate</i>
<i>Residual Covariances</i>					
Intercept RS _M ↔ Slope RS _M	−0.003	0.003	.315	[−0.009, 0.003]	−0.12
Intercept RS _F ↔ Slope RS _F	0.003	0.004	.362	[−0.004, 0.010]	0.11
Intercept RS _F ↔ Intercept RS _M	0.107	0.012	<.001	[0.083, 0.131]	0.64
Slope RS _F ↔ Slope RS _M	0.002	0.001	.007	[0.001, 0.004]	0.48
Intercept RS _F ↔ Slope RS _M	0.004	0.003	.200	[−0.002, 0.010]	0.14
Intercept RS _M ↔ Slope RS _F	0.001	0.003	.657	[−0.005, 0.008]	0.05
<hr/>					
<i>Explained Variance</i>	<i>R²</i>	<i>SE</i>	<i>p</i>		
Intercept RS _F	.16	.04	<.001		
Intercept RS _M	.16	.04	<.001		
Slope RS _F	.13	.06	.032		
Slope RS _M	.10	.05	.070		

Note. I_NegCom = intercept of negative communication. S_NegCom = slope of negative communication.

I_PosCom = intercept of positive communication. S_PosCom = slope of positive communication. RS =

relationship satisfaction. RelDur = Relationship duration. F = Females; M = Males. Significant values are printed in bold.

Table 3

Multilevel Models Predicting the Temporal Trajectories of Negative and Positive Communication by Self-Efficacy Belief about CoF

Fixed effects	Negative Communication				Positive Communication			
	Women		Men		Women		Men	
	Estimate (<i>SE</i>)	Odds Ratio	Estimate (<i>SE</i>)	Odds Ratio	Estimate (<i>SE</i>)	Odds Ratio	Estimate (<i>SE</i>)	Odds Ratio
Intercept	-2.466 (0.153) ^{***}	0.085	-2.947 (0.184) ^{***}	0.052	-1.790 (0.105) ^{***}	0.167	-1.32 (0.111) ^{***}	0.267
Time	-0.006 (0.004)	0.994	-0.007 (0.005)	0.993	-0.004 (0.004)	0.995	-0.003 (0.003)	0.997
CoF _{actor}	0.146 (0.220)	1.157	0.119 (0.222)	1.126	0.053 (0.153)	1.055	0.219 (0.133)	1.245
CoF _{partner}	-0.069 (0.184)	0.934	0.166 (0.260)	1.180	0.291 (0.123) [*]	1.338	-0.258 (0.161)	0.773
CoF _{actor} × Time	-0.000 (0.006)	1.000	-0.013 (0.006) [*]	0.987	-0.004 (0.005)	0.996	-0.000 (0.004)	0.999
CoF _{partner} × Time	0.013 (0.006) [*]	1.013	0.000 (0.007)	1.001	-0.003 (0.004)	0.997	0.009 (0.005)	1.009
RS	-0.066 (0.179)	0.936	-0.223 (0.242)	0.800	0.180 (0.156)	1.198	-0.211 (0.172)	1.235
RS × Time	-0.020 (0.006) ^{***}	0.980	-0.006 (0.007)	0.993	0.006 (0.006)	1.006	-0.000 (0.005)	1.000
RelDur	0.000 (0.006)	1.001	0.004 (0.007)	1.005	0.000 (0.004)	1.001	-0.007 (0.004)	0.992
RelDur × Time	-0.000 (0.000)	1.000	0.000 (0.000)	1.000	-0.000 (0.000)	1.000	0.000 (0.000)	1.000
TopSev	0.022 (0.157)	1.023	-0.014 (0.185)	0.986	-0.282 (0.116) [*]	0.755	0.055 (0.149)	1.047
TopSev × Time	0.003 (0.005)	1.003	0.004 (0.005)	1.004	0.006 (0.004)	1.006	-0.005 (0.004)	0.995
Random Effects	<i>s</i>		<i>s</i>		<i>s</i>		<i>s</i>	
Intercept	1.345		1.632		0.856		1.013	
Time	0.028		0.036		0.026		0.028	
Model Fit Indices	-2 log likelihood	AIC	BIC		-2 log likelihood	AIC	BIC	
	-8425	16918	17201		-13454	26975	27259	

Note. CoF = Self-efficacy belief about clarity of other's feelings. RS = Relationship satisfaction. TopSev = Topic Severity of the selected conflict discussion topic. Actor = Actor

effect (e.g., CoF_{women} → negative communication_{women}). Partner = Partner effect (e.g., CoF_{women} → negative communication_{men}). *s* = standard deviation of the random effect. AIC =

Akaike Information Criteria; BIC = Bayesian Information Criteria.

^{*} *p* < .05. ^{***} *p* < .001 (two-tailed).

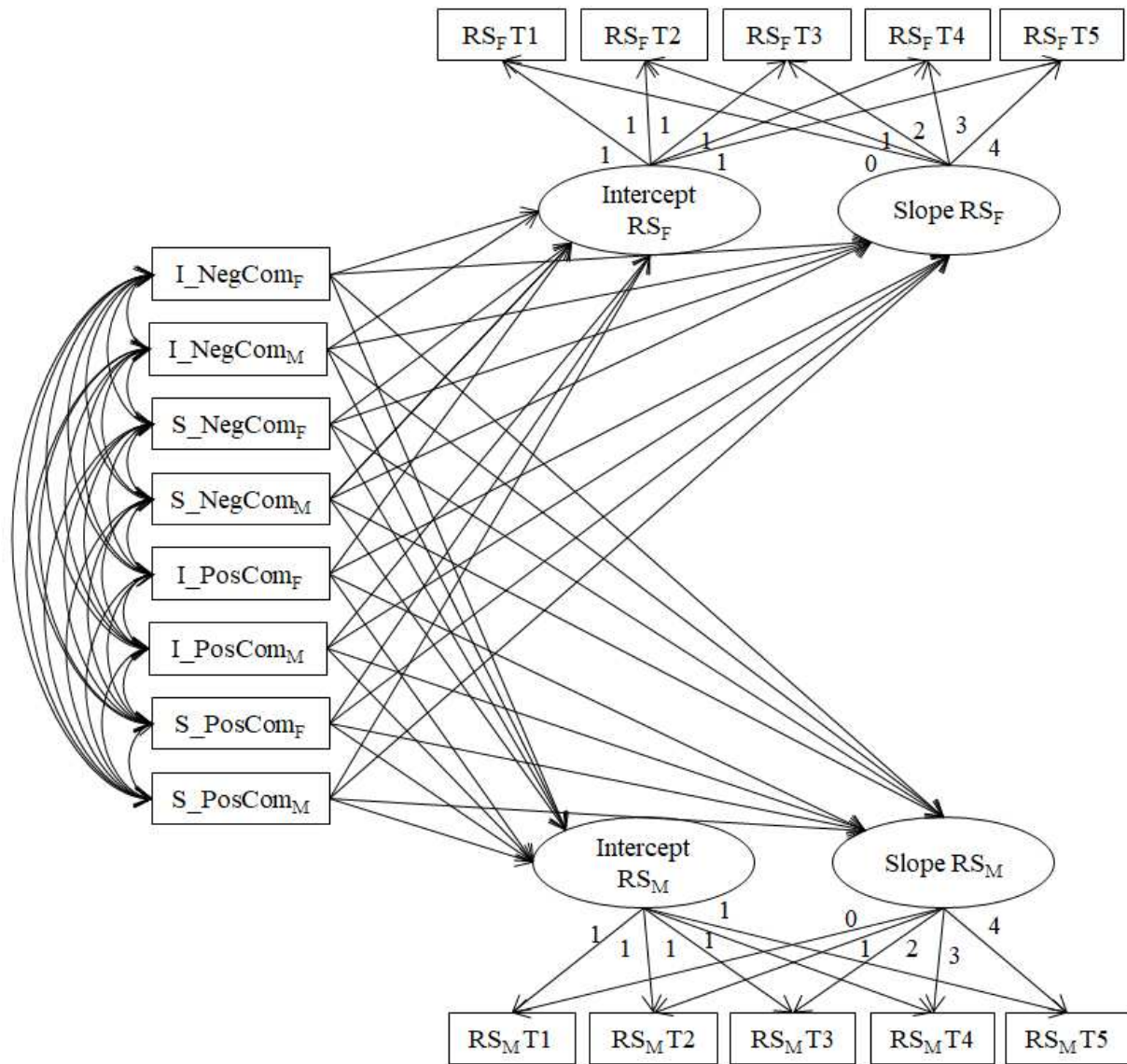


Figure 1. Latent growth-curve model: Intercept (I) and slope (S) of men's and women's negative (NegCom) and positive (PosCom) communication in the conflict discussion at T1 predicting individual intercepts and slopes of relationship satisfaction across five measurement points (T1, T2, T3, T4, T5). F = Females; M = Males; RS = Relationship satisfaction. Residuals of the latent intercepts and slopes of men and women, and residuals of men and women's RS at T1 through RS T5, respectively, were allowed to correlate within measurement occasion. These correlations are not displayed for the sake of clarity of presentation. For the same reason, the control variable, relationship duration, is not depicted.

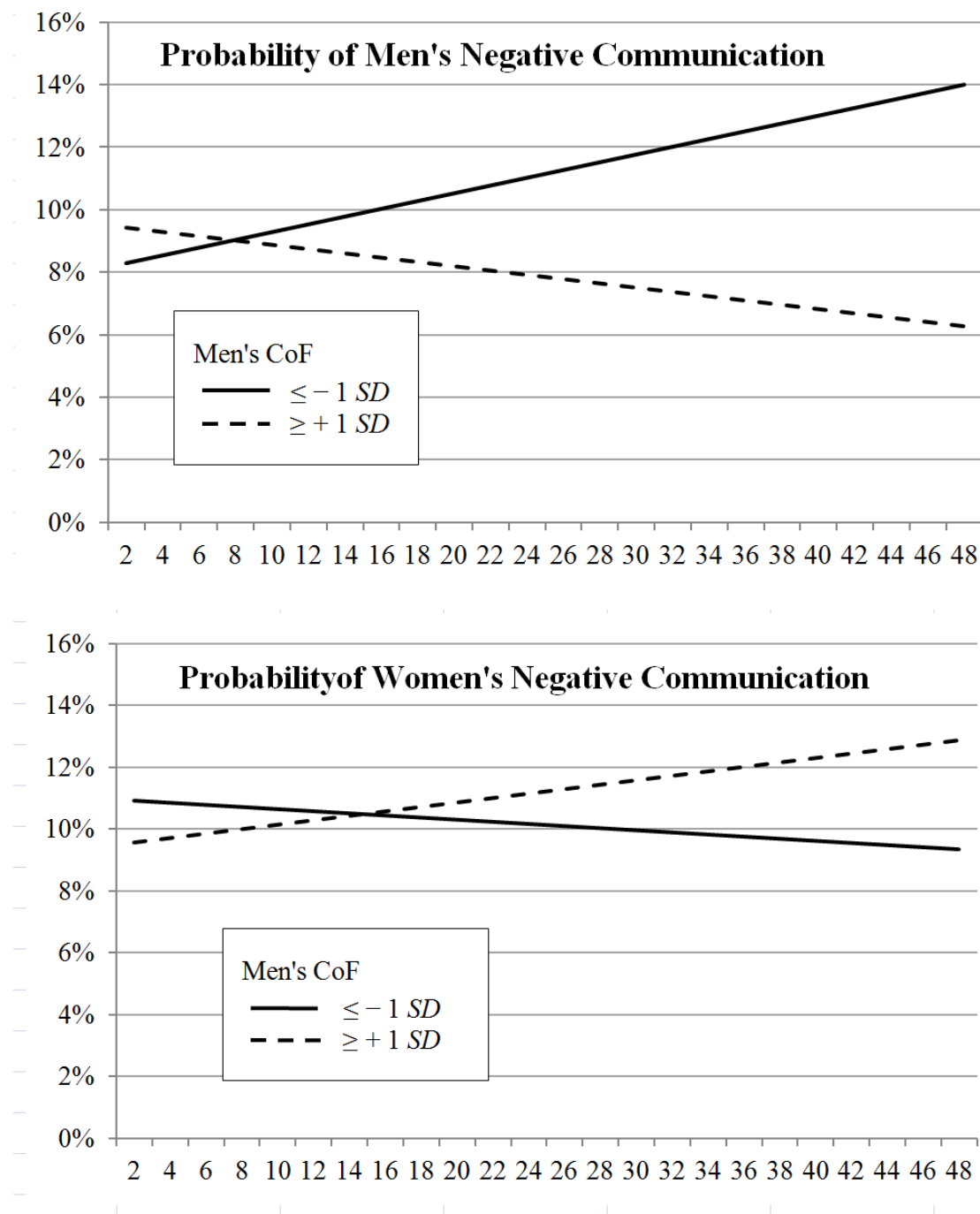


Figure 2. Temporal trajectory of the likelihood of men's (upper part) and women's (lower part) negative communication depending on men's self-efficacy belief about clarity of other's feelings (men's CoF).